

THI QAR VILLAGE ROADS
SEGMENT 3
GOVERNORATE OF
THI QAR, IRAQ

SIGIR-PA-06-059
OCTOBER 26, 2006

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 26 OCT 2006		2. REPORT TYPE		3. DATES COVERED 00-00-2006 to 00-00-2006	
4. TITLE AND SUBTITLE Thi Qar Village Roads Segment 3 Governorate of Thi Qar, Iraq				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Office of the Special Inspector General for Iraq Reconstruction, 400 Army Navy Drive, Arlington, VA, 22202				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 24	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

October 26, 2006

MEMORANDUM FOR COMMANDING GENERAL, MULTI-NATIONAL FORCES-
IRAQ
DIRECTOR, IRAQ RECONSTRUCTION MANAGEMENT
OFFICE
COMMANDING GENERAL, GULF REGION DIVISION-
PROJECT AND CONTRACTING OFFICE, U.S. ARMY
CORPS OF ENGINEERS

SUBJECT: Report on Project Assessment of Thi-Qar Village Roads Segment 3 Project,
Thi-Qar, Iraq (Report Number SIGIR-PA-06-059)

We are providing this project assessment report for your information and use. We assessed the construction work performed on the Thi-Qar Village Roads Segment 3 Project, an IRRF funded, Facilities and Transportation project located in the Thi-Qar Governorate to determine its status and whether intended objectives will be achieved. This assessment was made to provide you and other interested parties with real-time information on a relief and reconstruction project in order to enable appropriate action to be taken, if warranted. The assessment team included an engineer and an auditor.

This report does not contain any negative findings. As a result, no recommendations for corrective action are made and further management comments are not required.

We appreciate the courtesies extended to our staff. This letter does not require a formal response. For additional information on this report, please contact Mr. James P. Mitchell at jim.mitchell@sigir.mil or at (703) 428-1100. For the report distribution, see Appendix C.

Stuart W. Bowen, Jr.
Inspector General

Special Inspector General for Iraq Reconstruction

SIGIR-PA-06-059

October 26, 2006

Thi Qar Village Roads – Segment 3 Governorate of Thi Qar, Iraq

Synopsis

Introduction. This project assessment was initiated as part of our continuing assessments of selected sector reconstruction activities for Facilities and Transportation. The overall objectives were to determine whether selected sector reconstruction contractors were complying with the terms of their contracts or task orders and to evaluate the effectiveness of the monitoring and controls exercised by administrative quality assurance and contract officers. We conducted this project assessment in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included a professional engineer and an auditor.

Project Assessment Objectives. The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties in order to enable appropriate action, when warranted. Specifically, we determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation met the standards of the design;
3. The Contractor's Quality Control plan and the United States Government's Quality Assurance program were adequate;
4. Project sustainability was addressed; and
5. Project results were consistent with original objectives.

Assessment Scope. The security situation on the Thi Qar village roads prevented the SIGIR assessment team from visiting the project site. Although we relied heavily on documentation contained in the USACE project files and interviews with the USACE representatives, we supplemented the information with satellite imagery of the project.

Conclusions. The assessment determined:

1. The design provided to the contract was sufficient to construct the project. The contract drawings included basic cut and fill roadway cross sections, as well as typical details on reinforced concrete pipe culverts. Additionally, GRD-PCO in previous SIGIR assessments for other village roads projects has stated:

Designs for village roads in Iraq are completed by the Iraq State Commission of Roads and Bridges (SCRB). These designs are generally the same for all projects except for the depth of cut and fill. The cross section prepared by the SCRB design sector shows sufficient detail to complete the work to the required specifications. All village road profiles are also provided by SCRB.

Based on this information from GRD-PCO, coupled with the drawings provided in the contract SOW, the design appeared sufficient and detailed enough to complete the requirements of the contract.

2. The construction appeared to be consistent with the intent of the project. The security situation in Thi Qar prevented the assessment team from visiting the project site and actually inspecting the road. Therefore, this conclusion is based on a review of the contract documentation provided by the U.S. Army Corps of Engineers Resident Office, which included the contract Statement of Work and bill of quantities, quality assurance reports and progress photos, pertinent contract correspondence, as well as interviews and correspondence with the U.S. Army Corps of Engineers Project Engineer and a satellite imagery of the project received from the National Geospatial-Intelligence Agency.
3. Based on the review of the contract documentation presented to the assessment team from the U.S. Army Corps of Engineers Resident Office, it appears the contractor did not submit a quality control plan or quality control reports. However, the Thi Qar Village Road Segment 3 project was completed in July 2005. The U.S. Army Corps of Engineers Resident Office personnel, part of the management team in July 2005, have since departed Iraq. Thus, at the time of our assessment, there was no one in the Gulf Region Division with any first hand knowledge about the project. Consequently, we were unable to find any evidence of a quality control plan or daily quality control reports.

The Government Quality Assurance program appeared effective in monitoring the contractor's construction progress and workmanship over the course of the Thi Qar Village Road project. The quality assurance reports sufficiently documented the quality assurance activities. The QA reports included photographs reinforcing the information provided in reports. However, the "conflicts with plans and specifications" section of the QA reports lacked sufficient detail. Our review of 29 QA reports revealed no deficiencies noted in this section. On each report, the QAR stated the "... works is very good."

Although the quality management documentation provided to, and reviewed by, the assessment team did not include QC reports and deficiency logs, the USACE's Area Engineer's appraisal evaluated the overall contractor's quality of workmanship as above average.

4. A review of the contract file disclosed no sustainability issues associated with the project. There was no specialized equipment provided by the contract, nor was there a need for any maintenance manuals.
5. The project met the original contract objectives. The contractor completed a paved two-lane, 7.1 kilometer road in the Thi Qar Governorate under the management of the U.S. Army Corps of Engineers, Gulf Region Division. The village road is providing a necessary transportation link for the Iraqi population living in that part of the Thi Qar Governorate.

Recommendations and Management Comments. This report does not contain any negative findings or recommendations for corrective action. Therefore, management comments were not required. The Gulf Region Division reviewed the draft report and had no comments or additional information to offer.

Table of Contents

Synopsis	i
Introduction	
Objective of the Project Assessment	1
Pre-Site Assessment Background	1
Contract, Modifications and Costs	1
Project Objective	1
Description of the Roadway (pre-construction)	3
Scope of Work of the Contract	3
Current Project Design and Specifications	3
Site Assessment of the Completed Work	
Earthwork	4
Sub-base	6
Base Course	7
Reinforced Concrete Pipe Culverts	10
Additional Third Party Verification	11
Closeout of the Project	11
Project Quality Management	
Contractor's Quality Control Program	11
Government Quality Assurance	12
Project Sustainability	12
Conclusions	13
Recommendations and Management Comments	14
Appendixes	
A. Scope and Methodology	15
B. Acronyms	16
C. Report Distribution	17
D. Assessment Team Members	19

Introduction

Objective of the Project Assessment

The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties in order to enable appropriate action, when warranted. Specifically, we determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation met the standards of the design;
3. The Contractor's Quality Control (CQC) plan and the United States Government's Quality Assurance (QA) program were adequate;
4. Sustainability was addressed; and
5. Project results were consistent with original objectives.

Pre-Site Assessment Background

Contract, Modifications and Costs

The Thi Qar Village Roads Project was funded through the U.S. Government's appropriated Iraq Relief and Reconstruction Fund (IRRF) and administered through the Facilities and Transportation Sector of the Project and Contracting Office (PCO). The PCO's Contracting Activity awarded contract W914NS-05-C-0039, a firm fixed price contract, for \$1,312,258 to an Iraqi contractor on 2 December 2004. The contract period was for 170 days from the date of the preconstruction conference. The U.S. Army Corps of Engineers (USACE) Gulf Region Division - South District (GRS) administered the contract construction. According to the Gulf Region Division (GRD)-Project and Contracting Office (PCO) database, dated 3 March 2006, the project was reported to be 100% complete, with an actual completion date of 26 July 2005. There were three modifications to the initial contract:

- Modification #P0001 issued 20 July 2005, added additional earthwork requirements to the Bill of Quantities (BOQ). The modification also added a requirement to relocate 40 utility poles to accommodate the construction of the new road. The contract completion date was extended by 118 days from 21 May 2005 to 16 Sept 2005. As a result of the additional work items, the contract funding increased by \$109,600 from \$1,312,258 to \$1,421,858.
- Modification #P0002 issued 16 November 2005 to make an equitable adjustment in the contract due to a rise in the price of materials. The contract was increased by \$20,000 from \$1,421,858 to a contract value of \$1,441,858.
- Modification #P0003, issued 6 December 2005, was for an administrative change to the contract. There was no change to contract funding.

Project Objective

The project objective was to construct a 7.1 kilometer (km) paved village road in the Governorate of Thi Qar for everyday use by the local population. At the time of our assessment, the contract showed a location for the road alignment as depicted in green on Figure 1. However, based on discussions with the USACE Project

Engineer (PE)¹ working in the USACE's Thi Qar Resident Office, responsible for managing the project, the location of the project changed after the contract award at the request of the Director General (DG) for the Iraq State Commission of Roads and Bridges (SCRB). The DG in a letter to the USACE stated:

"After being awarded by the USACE to [a local Iraqi company], we received a map from the USACE designates the location of the road. After checking the location of the road on the map of the USACE, we found out that the road is not right and it is not the same road that we surveyed and there was a mistake in the map. We informed the GRS that the marked road is in the wrong location and we informed the project engineer to correct that mistake and the USACE agreed on that as we informed them with the right grid coordinates."

The grid coordinates provided by the SCRB delineated the alignment shown in red in Figure 1. The new alignment parallels an irrigation canal and runs in a north-south direction. The northern terminus of the road is at the Euphrates River. The road ends in the south at the Al Kumashiyah Railway Station.

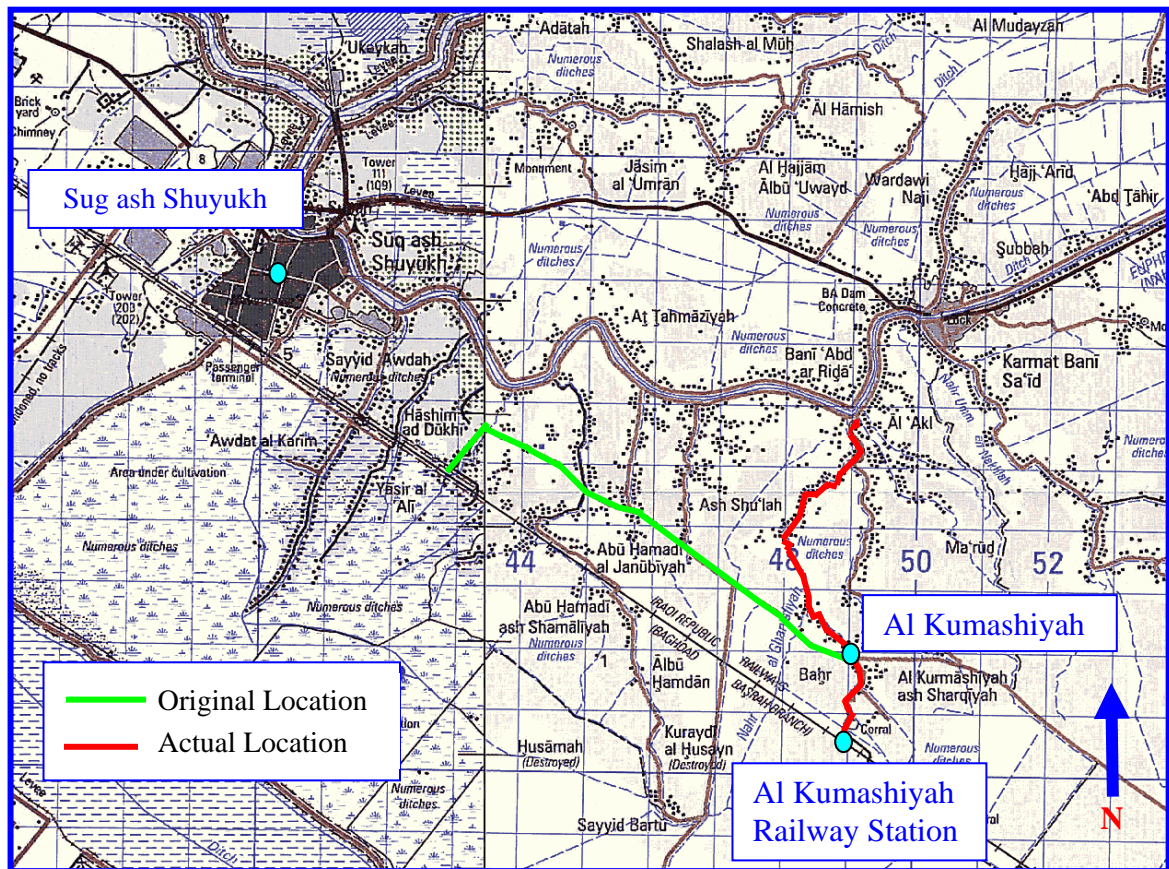


Figure 1: Thi Qar Village Roads Segment 3 Project

¹ The Thi Qar Village Road construction project was complete on 26 July 2005. By April 2006, the Thi Qar Resident Office staff involved in the management of the project had redeployed to the U.S. The SIGIR assessment team's point of contact with USACE was one of the current Thi Qar Resident Office's Project Engineers (PE). The PE significantly helped the team with acquiring contract related information about the project and researching issues to answer our questions. However, the PE did not have first hand knowledge about the project because he did not begin working in the Thi Qar Resident Office until after the Thi Qar Village Road project was complete.

Description of the Roadway (pre-construction)

The description of the roadway (pre-construction) was based on information obtained from the contract and the USACE project file. The existing roadway was unpaved in a rural area of the governorate. The road project site shown in Figure 1 was located between the Euphrates River (on the north) and the Iraq Republic Railway line in the south. The project site is approximately 40 kilometers (km) southeast of the city of Nasiriyah, and 10 km southeast of the city of Sug ash Shuyukh. The terrain along the project site is level.

Scope of Work of the Contract

Based on the contract Statement of Work (SOW), the major tasks for the 7.1 km Segment 3 village road project included:

- Earthwork (cut and fill sections)
- Building a crushed aggregate sub-base
- Paving an asphalt bituminous base course
- Constructing soil shoulders
- Providing cross drainage structures (culverts) where necessary

In addition, Modification 01 added a requirement to relocate 40 utility poles and electrical cable to accommodate the construction of the new road.

Current Project Design and Specifications

The SOW required the contractor to review the existing design, revise and complete the design as necessary, and construct the roads. The design drawings provided in the contract included two typical cross sections of the roadway, one for a fill section, and the other for a cut section. Also the contract contained drawings providing typical details for reinforced concrete pipe culverts, concrete retaining walls, and concrete curbs.

The contract also included a BOQ for quantifying the material requirements on the project. The BOQ included requirements and quantities for construction of:

- Fill sections (earthwork, i.e., clearing, grubbing, adding suitable fill material, etc.)
- 30 centimeter (cm) compacted sub-base layer
- 10 cm asphalt base course layer²
- Reinforced concrete pipe culverts

The following table lists the quantities required by the BOQ for each item:

<u>Item</u>	<u>Quantity</u>
1. Fill	95,000 cubic meters (m ³)
2. 30 cm subbase	13,748 m ³
3. 10 cm base	42,300 square meters (m ²)
4. Reinforced concrete pipe culverts:	
• Single pipe culverts Ø 1m	1,095 linear meters (lm)
• Double pipe culverts Ø 1m	28 lm

² The base layer is the wearing surface layer of asphalt pavement.

The SOW also required the design to conform to the specifications in the design criteria manual “Republic of Iraq; Ministry of Housing & Construction; State Organization of Roads & Bridges; Highway Design Manual; 1982 Design & Study Department; Road & Traffic Division”, and standard Iraqi specifications found in the publication “Republic of Iraq; Ministry of Housing & Construction; State Organization of Roads & Bridges; Standard Specifications for Roads & Bridges; Department of Design & Studies, 1983.”

The SOW required the contractor to review the existing design and to revise and complete the design, as necessary. GRD-PCO in previous SIGIR assessments for other village roads projects has stated:

“Designs for village roads in Iraq are completed by the Iraq State Commission of Roads and Bridges (SCRB). These designs are generally the same for all projects except for the depth of cut and fill. The cross section prepared by the SCRB design sector shows sufficient detail to complete the work to the required specifications. All village road profiles are also provided by SCRB.”

Based on this information from GRD-PCO, coupled with the drawings provided in the contract SOW, the design appeared sufficient and detailed enough to complete the requirements of the contract.

Site Assessment of the Completed Work

The SIGIR Assessment Team did not visit the Segment 3, Thi Qar Village Roads project site due to the security situation in Thi Qar. Therefore, our project assessment relied solely on information obtained from the contract files, interviews with the USACE staff at the Adder Area Office and Thi Qar Resident Office, and satellite imagery received from the National Geospatial-Intelligence Agency. Information contained in the contract files included the contract and modification documents, pertinent correspondence, SOW drawings, the USACE quality assurance reports and photographs.

Based on the PCO database, the Thi Qar Village Road Segment 3 project was completed on 26 July 2005. As mentioned earlier, at the time of our assessment in April 2006, the USACE project engineer (PE) who worked on the project had redeployed to the U.S. Therefore, the assessment team relied on the contract documentation for the majority of information about the project. We focused our assessment on the completed earthwork associated with the fill sections, the sub-base and asphalt base course construction, and the construction of the reinforced concrete pipe culverts.

Earthwork

To construct a fill section, the BOQ required the contractor to:

“Provide the materials & equipments needed to execute earthwork (fill) with suitable soil and to do all the works needed including clearing & grubbing of natural ground to the depth of 10 cm and the compaction should be by layers, the layer should not be more than 20 cm thick according to the drawings & general specifications for Roads & Bridges, sections R2, R5, and according to the directions of R.E [resident engineer].”

For an illustration of the typical fill cross section provided in the contract drawings, see Figure 2.

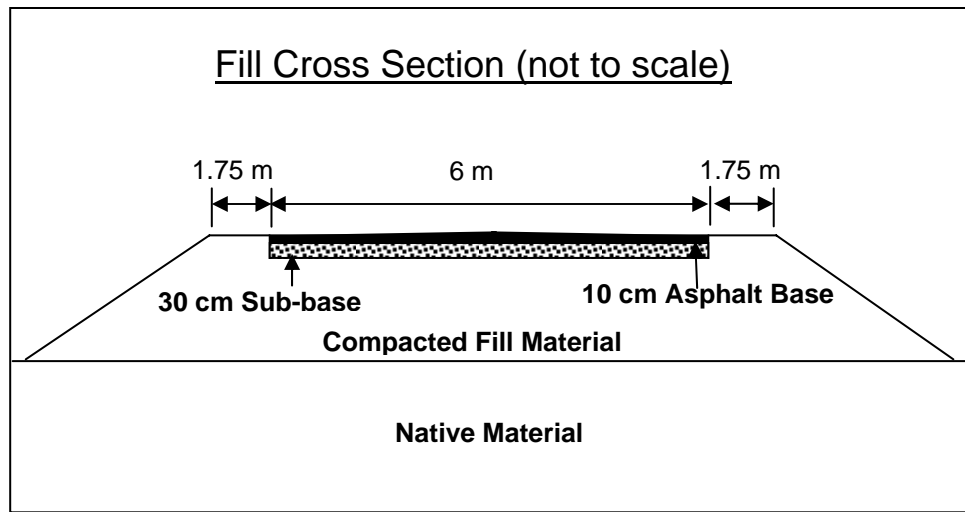


Figure 2. Typical fill cross section

The BOQ required the contractor to place 95,000 m³ of fill material. Although, we were not able to verify quantities, we reviewed USACE Quality Assurance (QA) reports to determine the adequacy of the earthwork in constructing the fill sections along the 7.1 km roadway. Based on our review, the earthwork construction appeared to meet the requirements of the contract. The material stockpiled along the roadway prior to placement appeared capable of being compacted to form a stable fill area with side slopes as shown in Figure 2. Site Photos 1 and 2 show the material stockpiles used to construct fill sections. Site Photo 1 shows a dump truck placing material along the roadway. In Site Photo 2 a motor grader is leveling the material prior to compaction.



Site Photo 1. Trucks delivering material to the roadway (Photo provided by USACE)



Site Photo 2. Fill material being leveled. (Photo provided by USACE)

There was one area of concern noted by the assessment team as shown in Site Photo 3. The material utilized to construct the fill section appears to contain organic matter. The Iraqi Standard Specifications for Roads and Bridges notes that soil containing more than 12 percent organic matter (as tested by British Standard 1327) is unsuitable. The contract files did not contain any record of tests for organic

matter, so it is unclear whether the amount of organic matter in the embankment shown in Site Photo 3 exceeds the 12 percent threshold. Based on subsequent photographic evidence, the effects of the organic material appear to be insignificant.



Site Photo 3. Embankment with organic matter in the fill. (Photo provided by USACE)

Sub-base

The contract SOW required the construction of a crushed aggregate sub-base, 30 cm in thickness. The BOQ stipulated the sub-base layer to be constructed with Type B material according to the drawings and Section R6 of the Iraqi Standard Specifications for Roads and Bridges. Type B material is a granular, sand gravel mixture meeting the gradation requirements contained in the Iraqi Standard Specifications for Roads and Bridges.

Our review of the QA reports indicated there were no identified deficiencies associated with the sub-base construction. The contractor brought in granular material and stockpiled the material on the roadway. It appeared the contractor used water trucks and rollers to obtain the required level of compaction as the sub-base was constructed. Site Photo 4 provides an example of the rolling operations and Site Photo 5 shows a water truck spraying water on the sub-base material in order to reach the material's optimum moisture content for achieving maximum density. Site Photo 6 shows a completed sub-base portion of the roadway.



**Site Photo 4. Rolling operations to compact sub-base.
(Photo provided by USACE)**



**Site Photo 5. Watering the sub-base.
(Photo provided by USACE)**



Site Photo 6. Compacted sub-base. (Photo provided by USACE)

Base Course

The contract SOW included the construction of an asphalt concrete base course, 10 cm in thickness, as the wearing surface. The BOQ required the construction of the base course (including compaction and spraying of prime coat) to be in accordance with Sections R8A and R9 of the Iraqi Standard Specifications for Roads and Bridges. Section R8A governs the prime coat spraying and Section R9 pertains to the asphalt concrete pavement.

Based on our review of the QA reports, the asphalt base construction appeared to meet contract requirements. However, the USACE RE and the Quality Assurance Representative (QAR) did identify isolated problems with the pavement

construction. The USACE RE indicated on 17 July 2005, that within the first 500-750 meters of the project from the railroad station (*the southern limit of the project*), the asphalt appeared to have too much aggregate on the top layer (Site Photo 7).



Site Photo 7. Exposed aggregate on surface of asphalt base course.
(Photo provided by USACE)

Based on the contractor's response to the USACE RE, the mix contained a higher proportion of course aggregate. Although the contractor indicated a mix with a higher proportion of course aggregate provided grater stability (against rutting), the pavement was also subject to increased possibility of cracking and potential raveling. Nonetheless, the contractor stated they would repair the section in question by overlaying base course with a fine mix of asphalt.

The other issue noted by the USACE RE was the outside edge problem as shown in Site Photo 8. In correspondence to the contractor, the USACE RE stated:

"Ideally, there should be a definitive borderline along the side of the asphalt road and the shoulder. In other words, you should be able to clearly see where the asphalt stops and the shoulder starts."

The contractor indicated the edge would be corrected when the shoulders were constructed.



Site Photo 8. Outside pavement edge with a non-uniform edge. (Photo provided by USACE)

In addition to reviewing the QA reports, the USACE Resident Office in April 2006, dispatched an Iraqi local national QAR to the project site to inspect the Thi Qar Village Road, and take pictures showing current conditions. The assessment team reviewed the photos taken by the USACE QAR and the condition of the pavement appeared to be in satisfactory condition, except for some mud on the road. The photos did not reveal any surface deficiencies such as cracking, rutting, raveling, or potholes. The minor discrepancies noted during the inspection process do not appear to have adversely affected the overall condition of the road. Site Photos 9 and 10 show the condition of the Thi Qar Village Road in April 2006, approximately 9 months after completion.



Site Photo 9. Curved section of Thi Qar Village road in April 2006. (Photo provided by USACE)



**Site Photo 10. Straight section of Thi Qar Village road in April 2006.
(Photo provided by USACE)**

Reinforced Concrete Pipe Culverts

The Contract BOQ required the contractor to construct 1,095 single linear meters (lm) and 28 double linear meters (lm) reinforced concrete pipe culverts. The BOQ also required construction of these culverts to be in accordance with Sections R3, R5, and R8 of the Iraqi Standard Specifications for Roads and Bridges, and as directed by the USACE RE. The locations for the culverts were not specified in the contract. Although the assessment team could not verify the actual number of culverts constructed, we reviewed the QA reports to evaluate the construction methods and workmanship. Based on our review of the QA reports, it appeared the reinforced concrete pipe culverts were constructed in the following manner:

1. Trench excavated to required depth.
2. Concrete pipe sections installed in concrete lined trench.
3. Concrete pipe sections jointed together to produce the required length of pipe using a cement mortar to form a durable watertight joint.
4. Concrete poured to encase the concrete pipe.
5. Concrete headwalls constructed at each end of the concrete pipe.
6. Trench backfilled and compacted.

The assessment team reviewed each QA report provided to the USACE Resident Office. We found no listed deficiencies in the reports regarding the culvert construction. Based on the photo documentation, the construction of the culverts appeared to meet the requirements contained in the SOW. Site Photo 11 shows the construction of a single reinforced concrete pipe culvert.



Site Photo 11. Reinforced concrete pipe culvert under construction.
(Photo provided by USACE)

Additional Third Party Verification

SIGIR received a summary of information from the National Geospatial-Intelligence Agency (NGA) based upon available resources stating: “The Thi Qar Village Road Project was completed according to contract specifications. The original road consisted of unpaved, loose gravel route that paralleled a canal. Aggregate probably was added to the road's surface and the canal bank. The road was paved and several small foot bridges that span the canal were constructed. The southernmost section of the Thi Qar Village road saw the greatest improvements. Prior to construction, it could not support vehicular traffic due to erosion and neglect.”

Closeout of the Project

On 31 July 2005, the USACE Gulf Region South and the contractor signed a contract completion document, acknowledging all work was completed, inspected, accepted, and in accordance with contract requirements. Also, after finishing the village road, the contractor organized a ribbon cutting ceremony and the village participants appeared very happy and satisfied with the completion of the project.

Project Quality Management

Contractor's Quality Control Program

The contract required the following submittals and approvals related to quality management:

- Quality control plan
- Construction inspection reports (weekly)
- Testing and inspection reports (as necessary)

Quality Control Plan

The contract SOW required submission of a Quality Control (QC) plan. The contract documentation provided to the assessment team by the USACE Resident Office did not include a QC plan, although, we could not conclude whether one was submitted because everyone in the Resident and Area Offices who worked on the project had departed Iraq. In addition to a QC plan, the SOW required weekly construction inspection reports. We could not verify their submission because the contract documentation provided did not include construction inspection reports.

Testing and Reports

The SOW also required testing and inspection reports, as necessary. QA reports indicate the contractor did conduct compressive strength testing on the concrete utilized for culvert construction, as well as compaction tests for the subgrade, aggregate sub-base, shoulders, and the asphalt concrete base. Testing was documented in the QA reports, but the actual test results were not part of the documentation provided to the assessment team.

Government Quality Assurance

Engineering Regulation (ER) 1110-1-12 and PCO Standard Operating Procedure CN-100 specify requirements for a Government QA program. The documentation provided to the assessment team included approximately 29 QA daily reports from a period between 28 March 2005 and 20 July 2005. The QA reports were prepared by a USACE Iraqi National QAR who provided on-site quality assurance. The QAR reports adequately documented the construction progress, containing information regarding contractor work activities, numbers of workers on site, numbers and type of equipment on site, testing, and reported progress. The QA reports also included photographs reinforcing the information provided in reports. However, the “Conflicts with Plans and Specifications” section of the QA reports lacked sufficient detail. Our review of the 29 QA reports revealed no deficiencies noted in this section. On each report, the QAR stated the “... works is very good.” There were no deficiencies reported for any of the major work items accomplished by the contractor in the construction of the 7.1 km road. Further, we did not find or review any QA deficiency logs.

Although the quality management documentation provided to, and reviewed by the assessment team did not include QC reports and deficiency logs, the USACE Area Engineer’s appraisal evaluated the overall quality of workmanship as above average.

Project Sustainability

A review of the contract file and discussions with the USACE RE disclosed no sustainability issues associated with the project. There was no specialized equipment provided by the contract, nor was there a need for any maintenance manuals.

Conclusions

We reached the following conclusions for the assessment objectives 1, 2, 3, 4, and 5. Appendix A provides details pertaining to Scope and Methodology and limitations of this project assessment due to the security conditions at the project site at the time of our visit to the USACE RE.

1. Determine whether project components were adequately designed prior to construction or installation.

The design provided to the contract was sufficient to construct the project. The contract drawings included basic cut and fill roadway cross sections, as well as typical details on reinforced concrete pipe culverts. Additionally, GRD-PCO in previous SIGIR assessments for other village roads projects has stated:

Designs for village roads in Iraq are completed by the Iraq State Commission of Roads and Bridges (SCRB). These designs are generally the same for all projects except for the depth of cut and fill. The cross section prepared by the SCRB design sector shows sufficient detail to complete the work to the required specifications. All village road profiles are also provided by SCRB.

Based on this information from GRD-PCO, coupled with the drawings provided in the contract SOW, the design appeared sufficient and detailed enough to complete the requirements of the contract.

2. Determine whether construction met the standards of the design.

The construction appeared to be consistent with the intent of the project. Security conditions prevented the assessment team from visiting the project site and actually inspecting the road. Therefore, this conclusion is based on a review of the contract documentation provided by the U.S. Army Corps of Engineers Resident Office and the NGA, which included the contract Statement of Work and bill of quantities, quality assurance reports and progress photos, pertinent contract correspondence, as well as interviews and correspondence with the U.S. Army Corps of Engineers Project Engineer and a summary of information received from the NGA.

3. Determine whether the Contractor's Quality Control plan and the Government Quality Assurance Program were adequate.

Based on the review of the contract documentation presented to the assessment team from the U.S. Army Corps of Engineers Resident Office, it appears the contractor did not submit a quality control plan or quality control reports. However, the Thi Qar Village Road Segment 3 project was completed in July 2005. The U.S. Army Corps of Engineers Resident Office personnel, part of the management team in July 2005, have since departed Iraq. Thus, at the time of our assessment, there was no one in the Gulf Region Division with any first hand knowledge about the project. Consequently, we were unable to find any evidence of a quality control plan or daily quality control reports.

The Government Quality Assurance program appeared effective in monitoring the contractor's construction progress and workmanship over the course of the Thi Qar Village Road project. The quality assurance reports sufficiently documented the quality assurance activities. The QA reports included photographs reinforcing the information provided in reports. However, the "conflicts with plans and specifications" section of the QA reports lacked sufficient detail. Our review of the 29

QA reports revealed no deficiencies noted in this section. On each report, the QAR stated the "... works is very good."

Although the quality management documentation provided to, and reviewed by the assessment team did not include QC reports and deficiency logs, the USACE's Area Engineer's appraisal evaluated the overall contractor's quality of workmanship as above average.

4. Determine if project sustainability was addressed.

A review of the contract file and discussions with the USACE RE disclosed no sustainability issues associated with the project. There was no specialized equipment provided by the contract, nor was there a need for any maintenance manuals.

5. Determine whether project results were consistent with original objectives.

The project met the original contract objectives. The contractor completed a paved two-lane, 7.1 kilometer road in the Thi Qar Governorate under the management of the U.S. Army Corps of Engineers, Gulf Region Division. The village road is providing a necessary transportation link for the Iraqi population living in that part of the Thi Qar Governorate.

Recommendations and Management Comments.

This report does not contain any negative findings or recommendations for corrective action. Therefore, management comments are not required. The Gulf Region Division reviewed the draft report and had not comments or additional information to offer.

Appendix A. Scope and Methodology

We performed this project assessment from April through May 2006, in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included a professional engineer and an auditor.

Official Security representatives at Camp Adder in Talil did not escort the Inspection Team to the project site because they did not consider it to be safe at the time of our visit to the USACE Thi Qar Resident Office. Therefore, our project assessment relied solely on information obtained from:

- Reviewing contract documentation to include the following: Contract, Contract Modifications, Contract documentation, and Statement of Work;
- Reviewing the design package (drawings and specifications) and Quality Assurance Reports;
- Interviewing the U.S. Army Corps of Engineers Project Engineer; and
- Receiving a summary of information from NGA based upon available resources.

Appendix B. Acronyms

BOQ	Bill of Quantity
cm	centimeter
CQC	Contractor Quality Control
DG	Director General
GRD	Gulf Region Division
GRS	Gulf Region Division, South District
km	kilometer
lm	linear meter
m	meter
m ³	cubic meters
NGA	National Geospatial-Intelligence Agency
PCO	Project and Contracting Office
QA	Quality Assurance
QAR	Quality Assurance Representative
PE	Project Engineer
RE	Resident Engineer
SOW	Statement of Work
SCRB	State Commission of Roads and Bridges (<i>Iraq government agency</i>)
USACE	United States Army Corps of Engineers

Appendix C. Report Distribution

Department of State

Secretary of State

Senior Advisor to the Secretary and Coordinator for Iraq

U.S. Ambassador to Iraq

Director, Iraq Reconstruction Management Office

Inspector General, Department of State

Department of Defense

Secretary of Defense

Deputy Secretary of Defense

Director, Defense Reconstruction Support Office

Under Secretary of Defense (Comptroller)/Chief Financial Officer

Deputy Chief Financial Officer

Deputy Comptroller (Program/Budget)

Inspector General, Department of Defense

Department of the Army

Assistant Secretary of the Army for Acquisition, Logistics, and Technology

Principal Deputy to the Assistant Secretary of the Army for Acquisition,

Logistics, and Technology

Deputy Assistant Secretary of the Army (Policy and Procurement)

Assistant Secretary of the Army for Financial Management and Comptroller

Chief of Engineers and Commander, U.S. Army Corps of Engineers

Commanding General, Gulf Region Division

Auditor General of the Army

U.S. Central Command

Commanding General, Multi-National Force - Iraq

Commanding General, Joint Contracting Command – Iraq/Afghanistan

Commanding General, Multi-National Corps – Iraq

Commanding General, Multi-National Security Transition Command – Iraq

Commander, Joint Area Support Group – Central

Other Defense Organizations

Director, Defense Contract Audit Agency

Other Federal Government Organizations

Director, Office of Management and Budget
Comptroller General of the United States
Inspector General, Department of the Treasury
Inspector General, Department of Commerce
Inspector General, Health and Human Services
Inspector General, U.S. Agency for International Development
Mission Director – Iraq, U.S. Agency for International Development

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

U.S. Senate

Senate Committee on Appropriations
 Subcommittee on Defense
 Subcommittee on State, Foreign Operations and Related Programs
Senate Committee on Armed Services
Senate Committee on Foreign Relations
 Subcommittee on International Operations and Terrorism
 Subcommittee on Near Eastern and South Asian Affairs
Senate Committee on Homeland Security and Governmental Affairs
 Subcommittee on Federal Financial Management, Government Information and International Security
 Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia

U.S. House of Representatives

House Committee on Appropriations
 Subcommittee on Defense
 Subcommittee on Foreign Operations, Export Financing and Related Programs
 Subcommittee on Science, State, Justice and Commerce and Related Agencies
House Committee on Armed Services
House Committee on Government Reform
 Subcommittee on Management, Finance and Accountability
 Subcommittee on National Security, Emerging Threats and International Relations
House Committee on International Relations
 Subcommittee on Middle East and Central Asia

Appendix D. Project Assessment Team Members

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

Andrew Griffith, P.E.

Angelina Johnston

Nancy Soderlund, CPA